

Framingham Heart Study

Manual of Procedures

MOP-version 1.0

August 22, 2018

Research Examination Center

Generation 3, Omni 2, NOS Cohorts Examination 3

Section #8c CERAD, Stroop, Montreal Cognitive, AD8

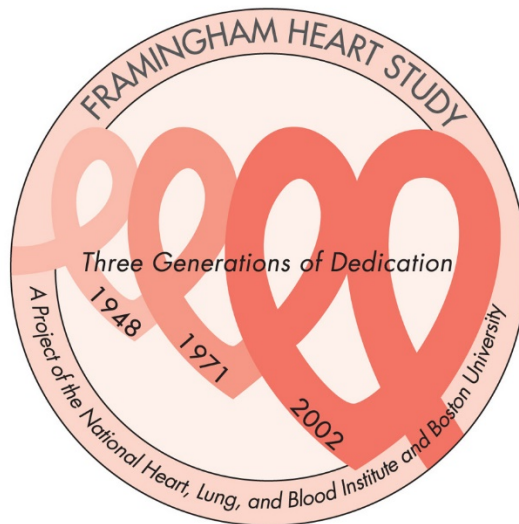


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1.0 CERAD & STROOP

1.1 ADMINISTRATION INSTRUCTIONS

CERAD Word List Memory Task and the Victoria Stroop Test

General Instructions to Examiners

The CERAD is a test of memory, so interruptions should be avoided during testing. If someone interrupts the session, the examiner must note it on the “Factors Affecting the Validity of Data” form by coding it as “other” and providing an explanation in the Comments section of that form.)

Turn on the digital voice recorder and state the tech id, the participant’s FHS ID, the first name of the participant and the date of examination.

Position yourself so that the participant is not able to see the response sheets at any time. Use of a clipboard is recommended as this allows for easy recording without placing the response sheets on the table. Upon completion of one response sheet, it can be tucked under the others on the clipboard, or placed upside-down and out of sight of the participant.

Reassure participants that people are often not able to remember everything, and that’s ok; we would just like them to try their very best on all tasks. ***“In this next test you’re going to be asked to remember some words. Just to let you know, most people usually cannot remember everything, which is fine. Whatever you do will be great.”***

If participants ask you for answers or feedback on their performance, respond with something neutral but encouraging. Inform them that you are not able to tell them whether their answers are correct. For example, if asked something like, “Is that right?” respond simply with, “You’re doing fine,” or “You did fine,” or “That was good.” If really pressed for feedback, say, “Unfortunately I can’t give you your score, I haven’t even calculated it yet, but you are doing fine.”

Offer neutral phrases of support during transitions from one condition to another. For example, when participants have provided all their responses on Trial 1 of the CERAD, a quick “great” or “good” before beginning the next trial is appropriate, although not mandatory. Nodding while the participant is responding is also a sign that seems to be reassuring. It is helpful especially with a participant who seems nervous, uncomfortable, or reluctant.

CERAD Word List Memory Task

Purpose

This test assesses participants' ability to learn and remember new information. It is a memory test, not a reading test. Ten common nouns are used. To insure that participants are familiar with and attend to each word, they are asked to read the words printed on the pages of the CERAD "flip books." The ten words on the flip cards are presented at a constant rate and then the subject is immediately asked to recall as many as possible. There are three trials, each of which presents the words in a different order. After a delay, participants are asked to recall the words again. The final condition is a recognition task to see whether they can pick the correct words out of a group of target and non-target words.

Materials Needed

- | | |
|-------------------------------------|------------------------------------|
| 1. CERAD Word List flip-book | 4. Clipboard |
| 2. Stopwatch | 5. Pen |
| 3. Data form | 6. Digital Voice Recorder** |

****Record all test instructions and responses.**

A. Learning Trials

Place the flipbook on the table in front of the participant so the title page faces him/her.

Trial 1

“Now I am going to show you ten printed words. Read each word out loud as I show it to you. Later I will ask you to recall all ten words.”

Show the words in the first set at the rate of one word every two seconds. If the participant cannot read the word, or misreads the word, or mispronounces the word say it for him/her and check the “target word is read incorrectly” column on the Response Sheet for that word. After the last word has been read, turn to the next (blank) page and say:

“Now, tell me as many as you can.”
***** Start stopwatch immediately*****

****Allow a maximum of 90 seconds for recall.** If participant says s/he is done before 90 seconds, end trial and move on to next section. It is ok to confirm with the participant whether they are done if their nonverbal behavior leads you to believe they are. You can ask, "Are you finished?" **

CERAD Word List Memory Task – (Cont.)

Data Recording

1. If the participant does not read the word correctly, place a check mark in the column with the header, “Check if target word is read incorrectly.”
2. In the “Responses (verbatim)” column, write down each word the participant says in the exact order that the participant said them. Be sure to **include** words that are not on the list (intrusions) and words that are repeated (perseverations).
3. Stop after the participant has given 35 responses.
4. If the participant gives more than 20 responses photocopy the sheet in place in the CERAD folder outside of room 112.

Place the flipbook on the table in front of the participant so the title page faces him/her.

Trial 2

“I’m going to show you the same words again. As before, read them aloud as I show them to you.”

Show the words in the second set (Trial 2) at the rate of one word every two seconds. If the person mispronounces a word or misreads a word, do not correct them on Trials 2 and 3. The goal of the test is consistency between the trials, not reading or pronunciation. After the last word has been read, turn to the next (blank) page and say:

“Now, tell me as many as you can.”

***** Start stopwatch immediately *****

*****Allow a maximum of 90 seconds for recall.*** If participant says s/he is done before 90 seconds, end trial and move on to next section. It is ok to confirm with the participant whether they are done if their nonverbal behavior leads you to believe they are. You can ask, "Are you finished?" **

Data Recording

1. In the “Responses (verbatim)” column, write down each word the participant says in the exact order that the participant said them. Be sure to **include** words that are not on the list (intrusions) and words that are repeated (perseverations).
2. Stop after the participant has given 35 responses.
3. If the participant gives more than 20 responses photocopy the sheet in place in the CERAD folder outside of room 112.

Trial 3

“I’m going to show you the same words again. As before, read them aloud as I show them to you.”

Show the words in the second set (Trial 2) at the rate of one word every two seconds. After the last word has been read, turn to the next (blank) page and say:

“Now, tell me as many as you can.”

***** Start stopwatch immediately *****

*****Allow a maximum of 90 seconds for recall. If participant says s/he is done before 90 seconds, end trial and move on to next section. It is ok to confirm with the participant whether they are done if their nonverbal behavior leads you to believe they are. You can ask, "Are you finished?" *****

CERAD Word List Memory Task – (Cont.)

Data Recording

1. In the “Responses (verbatim)” column, write down each word the participant says in the exact order that the participant said them. Be sure to **include** words that are not on the list (intrusions) and words that are repeated (perseverations).
2. Stop after the participant has given 35 responses.
3. If the participant gives more than 20 responses photocopy the sheet in place in the CERAD folder outside of room 112.
4. Record the clock time (i.e., the time of day) in the space provided at the bottom of the page.

B. Word List Recall

Record the time in the “Clock time in “Start of Recall trial” box at the top of the form.

Say:

“A few minutes ago I asked you to learn a list of ten words which you read one at a time from pages in a book. Now I want you to try to recall those words. Go ahead and tell me as many of those ten words as you can remember.”

Allow the participant a maximum of 90 seconds.

Data Recording

1. Record the clock time (i.e., the time of day) in the space provided.
2. In the “Responses (verbatim)” column, write down each word the participant

says in the exact order that the participant said them. Be sure to **include** words that are not on the list (intrusions) and words that are repeated (perseverations).

C. Word List Recognition

Say:

“Now I am going to show you a set of words printed on separate pages. Some of the words are from the list you saw earlier and some are words I haven't shown you before. I want you to tell me which words are from the list you saw earlier (show the first word). Is this one of the words you saw earlier?”

If participants lose track of the task, you can repeat the original instruction: *“Is this one of the words you saw earlier?”*

Urge subjects to give "Yes" or "No" responses, since "don't know" cannot be scored. If a participant still does not wish to provide a response, record this in the “comments” section.

Data Recording

Circle (or check) 0 if the participant says “no,” or 1 if the participant says “yes”.

Victoria Stroop Test (VST)

Materials Needed:

1. Stopwatch
2. Data form
3. Clipboard
4. Pen
5. Digital Voice Recorder
6. Three stimuli pages: Dots, Words, and Colors

Trial 1: Dots

Place the “Dots” stimulus page in front of the participant. Say:

“Name the colors of the dots as quickly as you can. Begin here [point] and go across the rows from left to right.”

Direct the participant’s eyes across the rows from left to right. Clarify, using your own words, if necessary. Once the participant understands the task, say:

“Ready, begin.”

Start stopwatch.

Correct any errors immediately (if not self-corrected) by pointing to the incorrect color patch while saying the correct response. Then say, *“Now continue as fast as you can.”* **If the technician and the participant make the correction at the same time and it is ambiguous on who made the correction first give it to them.**

If the participant makes a partial self correction mark as correct. For example if they say “bl, green” mark as correct.

Record time to completion, to the 100th of a second.

Trial 2: Words

Place the “Words” stimulus page in front of the participant. Say:

“This time, name the colors of the words as quickly as you can. Begin here [point] and go across the rows from left to right.”

Direct the participant’s eyes across the rows from left to right. Clarify, using your own words, if necessary. Once the participant understands the task, say:

“Ready, begin.”

Start stopwatch.

Correct any errors immediately (if not self-corrected) by pointing to the incorrect color patch while saying the correct response. Then say, “*Now continue as fast as you can.*”

If the technician and the participant make the correction at the same time and it is ambiguous on who made the correction first give it to them.

If the participant makes a partial self correction mark as correct. For example if they say “bl, green” mark as correct.

Record time to completion, to the 100th of a second.

Victoria Stroop Test (VST) – (Cont.)

Trial 3: Colors

Place the “Colors” stimulus page in front of the participant. Say:

“Again, name the colors in which the words are printed as quickly as you can. Do NOT read the word, tell me the color in which the word is printed.”

Direct the participant’s eyes across the rows from left to right. Clarify, using your own words, if necessary. Once the participant understands the task, say:

“Ready, begin.”

Start stopwatch.

Correct any errors immediately (if not self-corrected) by pointing to the incorrect color patch while saying the correct response. Then say, ***“Now continue as fast as you can.”***

If the technician and the participant make the correction at the same time and it is ambiguous on who made the correction first give it to them.

If the participant makes a partial self correction mark as correct. For example if they say “bl, green” mark as correct.

Record time to completion, to the 100th of a second.

Data Recording for all trials

1. As participant is responding, follow along on the data page.
2. If the participant makes a mistake but corrects it him/herself, circle the “1, Self-corrected.”
3. If the participant makes a mistake WITHOUT correcting, prompting the examiner to correct the error, circle the “2, Examiner-corrected.”
4. Record the completion time, to the 100th of a second, in the appropriate box.

1.2 Training and Certification of Staff

New Staff

- Given Protocol to read, understand, ask questions to Supervisor
- Protocol is demonstrated by Supervisor
- New Staff observes other Techs performing Protocol
- New Staff practices Protocol on staff and volunteers
- New Staff performs Protocol on participant with Supervisor or Certified Tech observing
- When Supervisor feels New Staff is proficient in Protocol, Supervisor will certify New Staff
- Certified New Staff will perform Protocol on own
- Certification date is noted in Certification Log

Recertification of Staff

- Occurs when there is a major deviation on Supervisor Observations or a new study with a new protocol is introduced into the exam
- Protocol is demonstrated by Supervisor
- Staff observes other Techs performing Protocol
- When Supervisor feels Staff is proficient in Protocol, Supervisor will recertify Staff
- Recertification date is noted in Certification Log

2.0 Montreal Cognitive Assessment (MoCA) Instructions

***1. Alternating Trail Making:** *"Please draw a line, going from a number to a letter in ascending order. Begin here [point to (1)] and draw a line from 1 then to A then to 2 and so on. End here [point to (E)]."*

2. Visuoconstructional Skills (Cube): *"Copy this drawing as accurately as you can, in the space below."* Point to the cube while giving instructions.

***3. Visuoconstructional Skills (Clock):** *"Draw a clock. Put in all the numbers and set the time to 10 past 11."*

4. Naming: Beginning on the left, point to each figure and say: *"Tell me the name of this animal."*

5. Memory: The examiner reads a list of 5 words at a rate of one per second, giving the following instructions: *"This is a memory test. I am going to read a list of words that you will have to remember now and later on. Listen carefully. When I am through, tell me as many words as you can remember. It doesn't matter in what order you say them."* Mark a check in the allocated space for each word the subject produces on this 1st trial. When the subject indicates that (s)he has finished (has recalled all words), or can recall no more words, read the list a 2nd time with the following instructions: *"I am going to read the same list for a second time. Try to remember and tell me as many words as you can, including words you said the first time."* Put a check in the allocated space for each word the subject recalls after the second trial. At the end of the second trial, inform the subject that (s)he will be asked to recall these words again by saying, *"I will ask you to recall those words again at the end of the test."*

6. Attention:

*** a.) Forward Digit Span:** *"I am going to say some numbers and when I am through, repeat them to me exactly as I said them."* Read the number sequence at a rate of one digit per second.

***b.) Backward Digit Span:** *"Now I am going to say some more numbers, but when I am through you must repeat them to me in the backwards order."* Read the number sequence at a rate of one digit per second.

c.) Vigilance: The examiner reads the list of letters at a rate of one per second, after giving the following instruction: *"I am going to read a sequence of letters. Every time I say the letter A, tap your hand once. If I say a different letter, do not tap your hand."*

d.) Serial 7s: *"Now, I will ask you to count by subtracting seven from 100, and then, keep subtracting seven from your answer until I tell you to stop."*

7. Sentence repetition: The examiner gives the following instructions: *“I am going to read you a sentence. Repeat it after me, exactly as I say it [pause]: I only know that John is the one to help today.”* Following the response, say: *“Now I am going to read you another sentence. Repeat it after me, exactly as I say it [pause]: The cat always hid under the couch when dogs were in the room.”*

8. Verbal fluency: *“Tell me as many words as you can think of that begin with a certain letter of the alphabet that I will tell you in a moment. You can say any kind of word you want, except for proper nouns (like Bob or Boston), numbers, or words that begin with the same sound but have a different suffix, for example, love, lover, loving. I will tell you to stop after one minute. Are you ready? [Pause] Now, tell me as many words as you can think of that begin with the letter F. [time for 60 sec]. Stop.”*

9. Abstraction: *“Tell me how an orange and a banana are alike.”* If the subject answers in a concrete manner, then cue only once: *“Tell me another way in which those items are alike.”* If the subject does not give the appropriate response say, *“Yes, and they are also both fruit.”* Do not give any additional instructions or clarification. After the practice trial, say: *“Now, tell me how a train and a bicycle are alike.”* Administer the 2nd trial, saying: *“Now tell me how a ruler and a watch are alike.”*

10. Delayed recall: *“I read some words to you earlier, which I asked you to remember. Tell me as many of those words as you can remember.”* Make a check mark (✓) for each of the words correctly recalled spontaneously without any cues, in the allocated space.

Optional: Following the delayed free recall trial, **prompt the subject with the semantic category cue provided below for any word not recalled, saying:** *“I’ll give you a hint, the word is a part of the body.”* Make a check mark (✓) in the allocated space if the subject remembered the word with the help of a category or multiple-choice cue. Prompt all non-recalled words in this manner. If the subject does not recall the word after the category cue, give him/her a multiple choice trial, using the following example instruction, *“Which of the following words do you think it was, NOSE, FACE, or HAND?”* Use the

following category and/or multiple-choice cues for each word, when appropriate:

FACE: category cue: part of the body

multiple choice: nose, face, hand

VELVET: category cue: type of fabric
velvet

multiple choice: denim, cotton,

CHURCH: category cue: type of building
hospital

multiple choice: church, school,

DAISY: category cue: type of flower

multiple choice: rose, daisy, tulip

RED: category cue: a color

multiple choice: red, blue, green

11. Orientation: *“Tell me the date today.”* If the subject does not give a complete answer, then prompt accordingly by saying: *“Tell me the [year, month, exact date, and day of the week].”* Then say: *“Now, tell me the name of this place, and which city it is in.”*

* Indicates the following tests DO NOT need to be administered during the MoCA, if administered during the Novel G3 NP Battery during this visit: (1) Alternating Trail Making, (2) Clock, (3) Digit Span-Forward, & (4) Digit Span-Backwards. The responses to the following tests can be used to score their matched items on the MoCA: Trails B, Command Clock, Digit Span-Forward, & Digit Span-Backwards

3.0 AD8

The AD8: The Washington University Dementia Screening Test (“Eight-item Interview to Differentiate Aging and Dementia”)

Administration

“I am going to ask you some questions about your memory and thinking in the last several years. Please respond to the following questions by choosing one of the three options: ‘Yes, a change,’ ‘No, no change,’ or ‘I don’t know.’ If you believe there has been a change in the last several years caused by thinking and memory problems, please refrain from explaining the cause of the change.”

If read aloud to the respondent, it is important for the clinician to carefully read the phrase as worded and give emphasis to note changes due to cognitive problems (not physical problems).

There should be a one second delay between individual items.

No timeframe for change is required.

Interpretation of Results

0-1: Normal cognition:

2 or greater: Impairment in cognition